What is claimed is:

1. A system for identifying signals-of-interest comprising:

a receiver operable to;

rapidly sample the amplitude and interferometer phase of a received signal even if the signal is below an existing system threshold;

calculate a first average and standard deviation from amplitude signal samples;

identify signal samples that have amplitude levels substantially above the calculated, first average amplitude;

identify signal samples that have substantially the same interferometer phase as an adjacent signal sample;

estimate a noise level using some of the signal samples, wherein the estimation excludes those samples which are identified as having amplitude levels substantially above the calculated first average amplitude and excludes those samples that are identified as having substantially the same interferometer phase as an adjacent signal sample; and

set a dynamic, system threshold above the estimated noise level.

2. The system as in claim 1 wherein the sampled signals do not contain a signal that was transmitted by the system.

3. The system as in claim 1 wherein the receiver comprises a receiver selected from the group consisting of a fixed-wing airborne receiver and a rotary-wing airborne receiver.

4. The system as in claim 1 wherein the receiver comprises an electronic support measure receiver.

5. The system as in claim 1 wherein the receiver comprises a radar warning receiver.

6. The system as in claim 1 wherein the receiver is further operable to set the dynamic, system threshold over a range consisting of 3 minutes to at least 15 minutes.

7. The system as in claim 1 wherein the estimated noise level comprises at least internal receiver noise.

8. The system as in claim 1 wherein an identified signal sample comprises a signal selected from at least the group consisting of a short duration, high amplitude pulsed signal and a continuous wave signal.

9. The system as in claim 1 wherein the receiver is further operable to:

calculate a second average amplitude from those signal samples that are not identified as having amplitude levels substantially above the calculated first average amplitude or as having substantially the same interferometer phase as an adjacent signal sample;

estimate a noise level from the second average amplitude; and

set a dynamic, system threshold above the estimated noise level.

10. The system as in claim 1 wherein the receiver is further operable to estimate a noise level using some of the signal samples after excluding those samples identified as having amplitude levels at

least 1.4 times the calculated standard deviation above the calculated first average amplitude.

11. The system as in claim 1 further comprising at least a pair of antennas, each antenna operable to contribute a signal portion to samples of the signal.

12. The system as in claim 1 further comprising four pairs of antennas, each pair generating a signal to be processed by the receiver, wherein the receiver is further operable to estimate a noise level from each generated signal, identify a maximum noise level from such estimated noise levels and to set a dynamic, system threshold above the maximum noise level.

13. A method for identifying signals-of-interest comprising:

rapidly sampling the amplitude and interferometer phase of a received signal even if the signal is below an existing system threshold;

calculating a first average and standard deviation from amplitude signal samples;

identifying signal samples that have amplitude levels substantially above the calculated first average amplitude;

identifying signal samples that have substantially the same interferometer phase as an adjacent signal sample;

estimating a noise level using some of the signal samples, wherein the estimation excludes those samples which are identified as having amplitude levels substantially above the calculated first average amplitude and excludes those samples that are identified as

having substantially the same interferometer phase as an adjacent signal sample; and

setting a dynamic, system threshold above the estimated noise level.

14. The method as in claim 13 wherein the sampled signals do not contain a signal that was transmitted by the system.

15. The method as in claim 13 further comprising setting the dynamic, system threshold over a range of 3 minutes to at least 15 minutes.

16. The method as in claim 13 wherein the estimated noise level comprises internal receiver noise.

17. The method as in claim 13 wherein an identified signal sample comprises a signal selected from at least the group consisting of a short duration, high amplitude pulsed signal and a continuous wave signal.

18. The method as in claim 13 further comprising:

calculating a second average amplitude from those signal samples that are not identified as having amplitude levels substantially above the calculated first average amplitude or as having substantially the same interferometer phase as an adjacent signal sample;

estimating a noise level from the second average amplitude; and

setting a dynamic, system threshold above the estimated noise level.

19. The method as in claim 13 further comprising estimating a noise level using some of the signal samples after excluding those samples identified as having amplitude levels at least 1.4 times the calculated standard deviation above the calculated first average amplitude.

20. The method as in claim 13 further comprising contributing a signal portion to samples of the signal.

21. The method as in claim 13 further comprising:

estimating noise levels from signals generated by four pairs of antennas;

calculating a maximum noise level from such estimated noise levels; and

setting a dynamic, system threshold above the maximum noise level.

22. An airborne device comprising:

a receiver operable to;

rapidly sample the amplitude and interferometer phase of a received signal even if the signal is below an existing system threshold;

calculate a first average and standard deviation from amplitude signal samples;

identify signal samples that have amplitude levels substantially above the calculated, first average amplitude;

identify signal samples that have substantially the same interferometer phase as an adjacent signal sample;

estimate a noise level using some of the signal samples, wherein the estimation excludes those samples which are identified as having amplitude levels substantially above the calculated first average amplitude and excludes those samples that are identified as having substantially the same interferometer phase as an adjacent signal sample; and

set a dynamic, system threshold above the estimated noise level.

23. The device as in claim 22 further comprising at least a pair of antennas, each antenna operable to contribute a signal portion to samples of the signal.

24. The device as in claim 22 further comprising four pairs of antennas, each pair generating a signal to be processed by the receiver, wherein the receiver is further operable to estimate a noise level from each generated signal, identify a maximum noise level from such estimated noise levels and to set a dynamic, system threshold above the maximum noise level.